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Implementation of Student Course Evaluation: Pandemic Impact on the Non-Constraint Engagement (NCE) Model

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ABSTRACT
Traditionally, students' feedback in the form of Student Course Evaluation (SCE) has been paper-based and made mandatory on students. Even when SCE is made online and voluntary, one major obstacle is low response rate. The Non-Constraint Engagement (NCE) Model is a newly introduced method in enhancing SCE in our institution, that attempts to overcome the common limitations of SCE. This study aims to examine the stability and sustainability of the NCE model implementation before, during and after the peak of the first wave of the COVID-19 pandemic in the Canadian University Dubai (CUD). The NCE Model was initially piloted between 2014 and 2015 and was found to be effective. To test its feasibility and sustainability over a longer period of time, an SCE exercise was implemented among undergraduate students across four faculties. For analysis, we used SCE data from 2015 to 2021. Evaluations were performed via Moodle in the online Learning Management System (LMS) before mid-term of each semester. There were two domains of SCE: course rating and instructor rating. Results showed acceptable and stable response rates, despite SCE being voluntary. The COVID-19 pandemic did not cause a fall in student participation. Instead, following the outbreak arrival, there was a sharp increase in SCE response rates. Similarly, students' rating on their courses and instructors remains high despite the massive, sudden change from physical to online instruction. This study introduces a new approach, the NCE model, which can be tested in other educational settings to enhance SCE.

1. INTRODUCTION

Across the globe, higher learning institutions adopt student course evaluations (SCE) as a method to assess students' satisfaction level and the effectiveness of teaching and learning activities. Feedback from students plays a huge role in helping instructors improve course contents, delivery method and teaching practices. SCE is also one of the factors taken into account by the administration while making decisions related to tenure, promotion and pay raise [1]. Beyond the conventional uses of SCE, these evaluations create a healthier learning environment through giving students a sense of belonging, voice and agency [2]. Academics on the other hand benefit from SCE by deriving motivation to maintain or improve performance, and by being held to accountability [3].

In recent decades, SCE has largely shifted from the paper-and-pen to online mode. This change was triggered by the digital revolution and massive uptake of the internet and Information and Communication Technology (ICT) that have swept across almost all sectors of human life including education, business, economy and many more. Various studies supported the use of online SCE and found it to be more efficient, cost-effective, eco-friendly and flexible [4, 5]. In addition, online SCE has been demonstrated to be less time-consuming, less resource-intensive, and able to gauge more response and data in terms of quantity and quality [6]. The challenge of online SCE however, lies in getting adequate response rates from students [7]. It is a common phenomenon worldwide that higher learning institutions face difficulties in getting students engaged and interested to provide honest feedback.

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Due to the widespread low response rates, many universities make SCE mandatory on students [8,9]. This means students are explicitly instructed to fill out SCE, and failure to do so comes with some forms of penalty (eg, inability to access exam results or academic transcripts, etc). The rationale behind mandatory – or authority-based evaluations – is that the more responses obtained, the more valid the results. However, empirical evidence shows that mandatory SCE can easily lead to misinformation bias; approximately 30% of students admitted that they gave inattentive responses when SCE was made compulsory [10]. Similarly, studies also found that imposing SCE on students did not increase the reliability or meaningfulness of feedback given [10]. On the other hand, voluntary SCE is increasingly seen as being more progressive, flexible and student friendly. Nevertheless, the drawbacks include poor response and lack of sample representativeness, which in turn may affect the validity of results. To mitigate this, universities invest huge resources in developing methods and strategies to make SCE online and voluntary, while giving high response rates.

With the advent of the COVID-19 pandemic, universities worldwide have faced massive disruptions to their academic schedules and undergone a major change in the mode of learning [11]. With closures of learning institutions as a result of physical distancing measures, communication between lecturers and students, or between administrative staff and students, have become largely virtual. Prior to the pandemic, adequate response rates in voluntary SCE are generally driven by visible and face-to-face initiatives such as verbal reminders in classes, and posters or notice boards in campus. With these physical elements now not in place, the university administration has to depend solely on virtual reminders and pleas (eg, through emails or university websites). The effectiveness of these online reminders in engaging students is difficult to determine.

This study aims to test the stability and sustainability of the Non-Constraint Engagement (NCE) model in SCE before, during and after the peak of the first wave of the COVID-19 pandemic, at the Canadian University of Dubai in United Arab Emirates [12]. More specifically, our objectives are:

1. To determine if the NCE model can maintain similar response rates during the first wave of the COVID-19 pandemic.
2. To study the impact of COVID-19 on the trend of evaluation scores related to course and instructor rating.

2. METHODOLOGY

A. The Non-Constraint Engagement (NCE) Model

The Canadian University of Dubai (CUD) adopted the Non Constraint Engagement (NCE) Model in its evaluation system, which was initiated and piloted from 2014 to 2015. The NCE is a specific SCE model that is defined as "participation of key stakeholders in a structured non-constraint framework of student course evaluation implementation" [12]. In other words, this model uses an online and voluntary approach, while including students as key stakeholders in order to drive their engagement. There are three major components of NCE: 1) engagement; 2) structured non-constraint implementation framework, and; 3) Result to Action (R2A) [12]. The diagram below illustrates the NCE model components and its basic features:

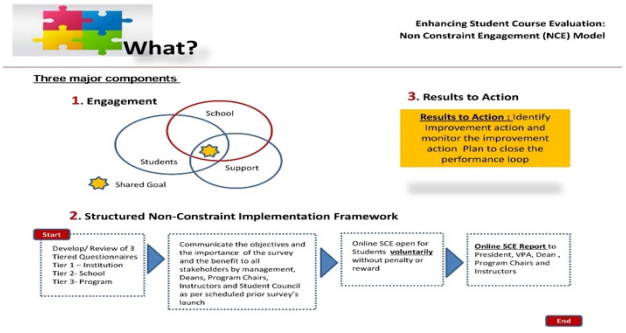

Figure 1: Non-Constraint Engagement Model (NCE)

Engagement refers to the active and dynamic participation of three key players – students, school and supporting units – towards a shared goal. Structured Non-Constraint Implementation on the other hand refers to the framework and process by which SCE occurs. These entail several steps including development and regular improvement of the tool (questionnaire), communication of the objectives and importance of survey to all stakeholders, undertaking of evaluation by students in a voluntary manner, and conveying SCE findings to the higher authority. Result to Action (R2A) is an outcome of the two previous components in which identified loopholes are rectified or addressed [12].

B. Study setting, study period and data collection

After a successful pilot project in 2014/2015, the NCE model went into a full implementation phase from 2016 to 2019. However, its execution and effectiveness were doubted when the COVID-19 outbreak towards the end of 2019 (followed by global movement restrictions in early 2020). This is because the NCE model depends heavily on constant motivation and moral support offered to students through interactions in the campus that include on-ground campaigns by the Student Affairs Division, verbal

reminders in classes, posters and notice boards. The closure of CUD campus, along with the shift of communication mode to online platforms (reminders were then mainly sent via emails) were expected to have a negative impact on students' motivation to undertake SCE. This could be further compounded by other effects of COVID-19 on students' psychological status as a result of sudden disruptions to classes and exam schedules, travel restrictions, economic downturns and the widespread fear and uncertainty.

To test the stability and sustainability of the NCE model, we used data from SCE across all undergraduate and postgraduate faculties. These include the Faculty of Applied Science and Technology (FEAST), Faculty of Architecture and Interior Design (FAID), Faculty of Management (FOM) and Faculty of Communication, Arts and Sciences (FCAS). SCE was performed via Moodle in the online Learning Management System (LMS), starting from 2015/16 until 2020/21 in every Fall and Spring semester. The SCE survey forms has two domains: course rating and instructor rating. Each consists of 10 items, with response options provided in a scale of 1 to 5; 1 indicates the lowest score and 5 indicates the highest.

3. RESULTS

Response rates were found to be fairly stable throughout the period of five years between 2015 and 2019, despite the minimal year-to-year fluctuations. However, there was a sharp increase of response rates across all the four faculties in the last year, between 2019/2020 and 2020/2021. This corresponded with the advent (and continuation) of COVID-19 outbreak. Overall, the average response rates for FCAS, FOM, FAID and FEAST were 41%, 40%, 45% and 45% respectively, with the percentage being lower in Spring semesters.

The figure below illustrates the trend of response rates in the last six years, according to faculty.

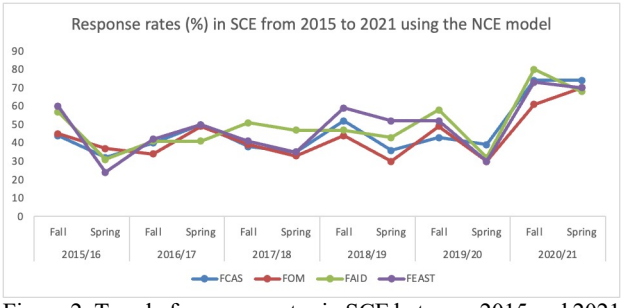

Figure 2: Trend of response rates in SCE between 2015 and 2021 using the NCE model

In the beginning of 2015/2016, response rates ranged between 44% and 60% among the four faculties. Toward the end of 2019/2020, they were between 30% to 39%, reflecting a downward trend. Some fluctuations could be seen in the interval period between the former and latter. By the end of 2019 and early 2020 – corresponding with the advent of the COVID-19 pandemic – a significant leap was visible as response rates jumped to 61% to 80% in Fall semester, followed by 68% to 74% in Spring semester. Analysis according to each faculty shows that FOM has a relatively low trend of response rate compared to the other three faculties, while FAID demonstrates the highest constant trend of response rates.

The figure below presents the overall (average) trend of response rates in SCE in the last six years, with all faculties combined.

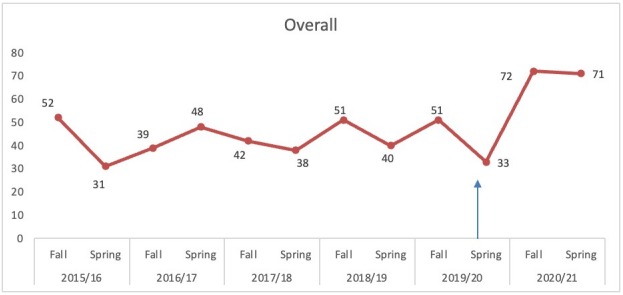

Figure 3: Trend of response rates in SCE between 2015 and 2021 using the NCE model

On the average, response rates ranged between 31% to 52%, prior to the pandemic. Fluctuations point to a common pattern of higher response rates in Fall semester followed by a drop in Spring semester, with the exception of the year 2016/2017. In early 2020 (as COVID-19 struck), there was a huge increase in response rates, by almost 40%. Between Fall and Spring semesters in that same (last) year, response rates plateaued.

A. Trend of students' rating

With regards to course and instructor rating, evaluation scores were largely above the minimum targeted value, which was 4.0, with the exception of two data points for course rating, which were 3.97 and 3.94 in 2015/16 Fall and Spring semester, respectively. Following that year, scores were consistent higher than 4 across all the faculties. The period immediately following COVID-19 arrival did not show any decline in evaluation scores. Instead, the scatter plot demonstrates a gradual upward trend of evaluation scores from 2015 to 2021.

The two figures below show the distribution of evaluation scores obtained from SCE across two domains; course rating and instructor rating.

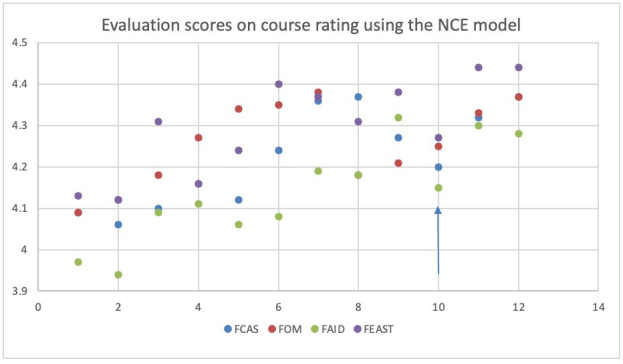

Figure 4: Scatter plot showing evaluation scores of course rating between 2015 and 2021

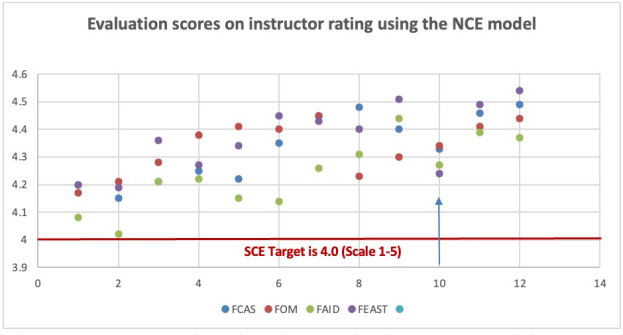

Figure 5: Scatter plot showing evaluation scores of instructor rating between 2015 and 2021

**in the x-axis, each interval represents a period of one year*

**blue arrow indicates the period around the advent of COVID-19 pandemic*

When scores of both domains (course and instructor rating) were combined, mean values showed an overall slight upward trend from 2015 to 2021. The pandemic advent did not cause any drop in the average evaluation score, but maintained (or slightly increased) it. The figure below illustrates the trend of mean (average) evaluation score for both domains (content and instructor rating) in the period of six years.

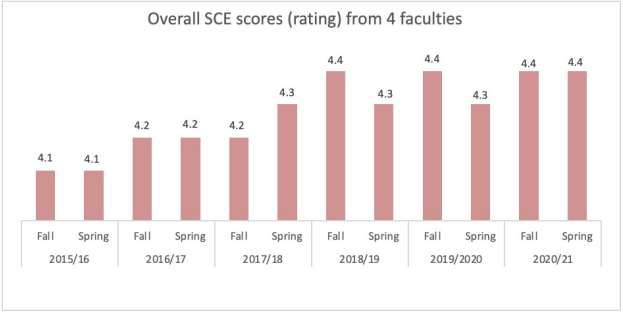

Figure 6: Trend of mean evaluation scores for both SCE domains from 2015 to 2021.

4. DISCUSSIONS

The overarching aim of this paper was to test the stability and sustainability of the NCE model in SCE in terms of response rates and students' rating. More specifically, we wanted to determine whether (or not) the NCE model could maintain high response rates over the years, despite the impact of COVID-19. Likewise, we also attempted to study the trend of evaluation scores over the same period, while checking if students' rating changed as a result of the pandemic and its related counter measures. Our initial hypotheses were that response rates and evaluation scores would drop significantly following the arrival of COVID-19 in UAE – especially from March 2020 onward when its containment measures began, including lockdowns and closures of learning institutions.

Overall, our findings showed that prior to COVID-19, response rates were maintained between 30% and 50%, with fluctuations in between. There was a pattern of cyclical drop in the Spring semester every year, except for 2016/2017. This range was in line with findings from previous empirical studies that measured response rates in online student evaluation surveys. For instance, Chapman et al. reported an online response rate of 43% [13] while Avery et al (2006) and Nulty (2008) found the response rates between 30 % to 40% [14, 15]. Our results however were higher than those of by Ling et al (2012) who reported online response rates of less than 30% [16].

The COVID-19 pandemic did not seem to negatively affect students' participation in SCE in the four faculties. Instead, our results demonstrated a sharp increase in response rates, indicating that more students showed interest to provide feedback despite the challenges they faced in terms of mobility and disruption to academic schedules. Schools and universities in the UAE were closed on 8 March 2020, prompting learning institutions across the country – including CUD – to undergo a major shift in its mode of teaching delivery, by adopting Emergency Remote Teaching (ERT) [17, 18]. Such a sudden change must have had a huge impact on students'

ability to cope academically and emotionally, given that ERT was new and temporary measure, compared to traditional face-to-face sessions [19, 20]. This impact could be further aggravated by the relative inexperience among lecturers in navigating the technicalities of virtual platforms and ensuring students' meaningful participation from behind screens [21]. Despite the merits of online learning, prior studies have highlighted a number of possible drawbacks such as low level of engagement by students due to limited non-verbal cues, the higher need for self-discipline and monitoring, and fewer chances to make meaningful interactions with peers [22, 23].

The leap in response rates following COVID-19 arrival – which also corresponded with the period of massive uptake of virtual classes – can be explained by several reasons. First, the NCE model which emphasizes student engagement as key stakeholders could have successfully sustained their interest to participate regardless of the change in learning environment. This is due to the model's 'student-centered' approach that is specifically designed to impart a sense of ownership and belonging, which in turn make them view SCE as a responsibility and platform for change. Second, even though reminders were sent mainly through emails following the closure of CUD campus, the administration made sure that clear and powerful messages were communicated and students were made aware of the value and impact of their feedback. Third, the rapid vaccination roll-out in UAE which began in early January 2021 may have brought a sense of hope for 'normalcy' to people, as restrictions were gradually eased [24, 25]. This could have increased students' motivation and optimism and affected their level of engagement with SCE. However, the association between COVID-19 vaccination and high response rates remains hypothetical, as we did not have additional, relevant data. Even if this was true, the impact of vaccination could be only linked to the maintenance of high response rates (between Fall and Spring 2020/2021) and not to the sharp increase prior to that.

From a different perspective, the significant rise in response rates can be due to a possible 'pseudo-effect' of the pandemic, characterized by an initial 'over-caution' by the university administration. As a result of anxiety over the possibility of fall in SCE response rates, the unit in charge may have doubled their effort in reaching out to students and reminding them about SCE, which in turn drove up the number of respondents. Similarly, on the students' side, given their first experience with a massive disease outbreak, this might have led to a sense of 'hyper-awareness' in the first few weeks or months following COVID-19 arrival. Such hyper-awareness can manifest in the form of 'hyper-connectedness' to the internet and therefore more responsiveness to SCE. Likewise, students may show extra enthusiasm with the newly experienced ERT and thus feel eager to provide feedback. However, this 'pseudo-effect' may not last long, especially when fatigue toward COVID-19 counter-measures and online learning sets in and student become desensitized. When that happens, response rates can gradually fall to the earlier baseline.

As regards course and instructor rating, evaluation scores showed a slight upward trend between 2015 and 2018, followed by a plateau between 2019 and 2021. The pandemic did not cause any drop in the students' rating on their courses and instructors. This was in line with the findings by Boysen (2020) [26]. Sustenance of modest evaluation scores could imply that lecturers and the university administration managed the transition period well and have successfully adjusted to ERT, while maintaining a somewhat similar degree of effectiveness. However, it is also crucial to look into the SCE questionnaire items, as the content of questions influences respondents' answers. For instance, if the items do not mention anything related to the shift from physical to online classes and how this change affects students, respondents may perceive it as irrelevant while providing their feedback. In the CUD SCE survey, there are two items in the course rating that can capture information relevant to how COVID-19 may have affected students: a) item 5 inquires students' level of motivation, and; b) item 8 inquires on the learning environment. The remaining items are rather general and unlikely to change pre- and post-COVID-19. This shows the importance of analysing selected items within the SCE questionnaire, as focusing only on overall evaluation scores can easily mask 'small findings' which are more meaningful for improvement.

This study has several limitations. First, despite the modest response rates throughout the study timeframe (from 2015 to 2021), we did not test whether samples have been truly representative of the student population, which can raise the issue of non-response bias [27]. Prior studies have consistently showed that students who are more likely to engage in SCE are those with higher academic grades and level of motivation.

On the other hand, students whose academic performance and motivation level are poor tend to show less interest in giving feedback [10, 28]. However, based on the minimum response rates required as suggested by Nulty (2008) [15], our response rates were more than adequate to produce reliable results due to the big enrolment size (data not shown).

Second, our analyses were restricted to quantitative data. We did not include the qualitative responses obtained (there is one open-ended question at the end of the survey

which has not been taken into account in this paper). This may have given an incomplete picture to our findings and missed some valuable input that can complement our quantitative findings [29].

Third, the SCE data after the advent of COVID-19 is limited to one year, or two rounds of evaluations. Therefore, we could not ascertain if the NCE model could sustain the leap in response rates after the sharp increase in 2019/2020, and whether this leap was a 'pseudo-effect' that would fade with time.

5. CONCLUSION

From the study findings, we can conclude that the NCE Model is stable and sustainable. The model has successfully maintained adequate response rates four to five years prior to COVID-19 pandemic and continued to appear robust during the crisis peak. This was evidenced by the huge leap in response rates in the period immediately after COVID-19 outbreak began – contrary to our original hypotheses – despite all the unexpected changes that took place within the learning environment. Many factors could have contributed to this phenomenon, and we were unable to capture all possible variables or confounders. However, available data demonstrates that the current SCE system using the NCE model is functioning well and has achieved one of its main objectives, that is to engage students as key stakeholders and impart in them a sense of ownership in this process. We also found that evaluation scores remained high and stable, despite the pandemic effects. Overall, our findings should be interpreted in the light of the above-mentioned limitations. We recommend that CUD continues to monitor and analyze SCE data in the next several years to ascertain if the significant increase in response rates post-COVID-19 can be maintained.

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